

What is claimed is:

1. An electrical connector, comprising:

a receptacle assembly including a receptacle connector having a plurality of movable balls retained in a wall thereof;

a plug assembly including a plug shell having a shoulder and an annular groove, a coupling ring having a shoulder and a thrust surface, a spring associated with said coupling ring and biasing said coupling ring shoulder into said plug shell shoulder;

wherein said receptacle assembly and said plug assembly have an unmated condition and a locked mated condition and said receptacle assembly and said plug assembly are brought into said locked mated condition when said receptacle assembly and said plug assembly are pushed together and said plurality of balls are thrust radially inwardly into said annular groove and retained there by the spring bias and thrust surface.

2. The electrical connector of claim 1, wherein said movable balls extend radially inwardly and radially outwardly beyond an inner wall and an outer wall of said receptacle.

3. The electrical connector of claim 2, wherein said receptacle body has a plurality of transverse through holes and said movable balls are retained in said wall.

4. The electrical connector of claim 1, wherein the electrical connector has one or more electrical contacts.

5. The electrical connector of claim 1, further comprising a key on one of said receptacle assembly and said plug assembly and a keyway on the other one of said receptacle assembly and said plug assembly.

6. The electrical connector of claim 1, wherein the coupling ring has an angled thrust surface which is biased in a manner such that when the thrust surface is in contact with said balls said balls are forced in a radially inward direction.

7. An electrical connector, comprising:

- a receptacle assembly including a receptacle connector having a plurality of studs extending radially outwardly therefrom and a plurality of contacts;
- a plug assembly having a plurality of contacts and including:
 - a plug body having one of a keyway and a key;
 - a coupling nut including a plurality of studs extending radially inwardly and having one of a keyway and a key;
 - a spring biasing said coupling nut in one direction;
 - a rotatable sleeve retained in said plug including coupling nut ramps and receptacle ramps;

wherein said receptacle assembly and said plug assembly have an unmated condition and a locked mated condition and said receptacle assembly and said plug assembly are brought into said locked mated condition when said receptacle assembly and said plug assembly are pushed together and said studs of said receptacle assembly and said coupling nut engage said rotatable sleeve and cause said sleeve to rotate thereby locking said receptacle assembly and said plug assembly.

8. The electrical connector of claim 7, wherein said unmated condition, said coupling nut studs are in contact with an end of said rotatable sleeve.

9. The electrical connector of claim 7, wherein said coupling nut ramps are a shallower angle than said receptacle ramp.

10. The electrical connector of claim 7, wherein said spring biases said coupling nut in said unmated condition.

11. The electrical connector of claim 7, wherein said coupling nut and said plug body are keyed to each other to prevent rotation relative to each other.

12. The electrical connector of claim 7, wherein once said receptacle studs are aligned with said receptacle ramps movement of said receptacle assembly towards said plug assembly causes said rotatable sleeve to rotate into said locked mated condition.

13. The electrical connector of claim 7, wherein said plug body moves in an axial direction during mating of said receptacle assembly and said plug assembly causing axial movement of said rotatable sleeve.

14. The electrical connector of claim 7, wherein said unmated condition said coupling nut ramps are not aligned with said coupling nut studs.

15. The electrical connector of claim 8, wherein said spring biases said coupling nut studs against said end of said rotatable sleeve.

16. An electrical connector comprising:
a receptacle assembly including a receptacle connector having a plurality of studs extending radially outwardly therefrom and a plurality of contacts;
a plug assembly having a plurality of contacts and including:
a plug body having one keyway and a key;

a coupling nut including a plurality of studs extending radially inwardly and having one of a keyway and a key such that said coupling nut is prevented from rotation relative to said plug body;

a spring biasing said coupling nut in one direction such that said spring biases coupling nut against said coupling nut studs;

a rotatable sleeve retained in said plug including coupling nut ramps and receptacle ramps;

wherein said receptacle assembly and said plug assembly have an unmated condition and a locked mated condition;

wherein when said receptacle assembly studs are aligned with said receptacle ramps in said unmated condition and said receptacle assembly and said plug assembly are pushed together, thereby causing said rotatable sleeve to rotate thereby aligning said coupling nut studs and said coupling nut ramps and further pushing of said receptacle assembly and said plug assembly cause further rotation of said rotatable sleeve and axial movement of said sleeve into a locked mated condition.

17. The electrical connector of claim 16, wherein said coupling nut ramps are a shallower angle than said receptacle ramp.